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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,571	09/23/2003	Mark Alan Patterson	BIROF 104	3043
2555	7590	01/31/2006	EXAMINER	
KREMBLAS, FOSTER, PHILLIPS & POLLOCK 7632 SLATE RIDGE BOULEVARD REYNOLDSBURG, OH 43068			PIPALA, EDWARD J	
			ART UNIT	PAPER NUMBER
			3663	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/668,571

Applicant(s)

PATTERSON, MARK ALAN

Examiner

Edward Pipala

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4 and 5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/23/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is in response to Applicant's Election filed on December 9, 2005.

Election/Restrictions

2. Applicant's election of claims 1, 2, 4 and 5 in the reply filed on December 9, 2005 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Claims 3 and 6-8 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 12/9/05.

Information Disclosure Statement

4. The IDS filed with the application on September 23, 2003 has been fully considered by the Examiner, as indicated by the accompanying two initialed copies of applicant's form PTO-1449 (two sheets).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Claim 1 lines 4-6 Applicant recites "an acceleration sensor mounted to the lift truck for sensing the angular direction of a resultant of the forces of gravitational acceleration and vehicle travel acceleration", whereas the specification merely suggests the use of an acceleration sensor (18, p. 8 ll. 12-19) mounted to the mast (12) of the lift truck and goes on to say that "[t]he sensed acceleration is the resultant of the gravitational acceleration force vector and the acceleration force vector from changes in velocity or speed of the lift truck as it travels along a path, that is the $F=ma$ force vector."

As presently set forth, the acceleration sensor and tilt control system are essentially a black box with no description of the internal workings, thereof. Applicant's disclosure is insufficient in that it fails to set forth in an adequate and sufficient manner, a description of the internals of the acceleration sensor, the manner in which an angular direction representing the resultant angular direction of acceleration when the lift truck is at rest is stored and compared so as to produce an output for controllably varying an actuator to bring the resultant angular direction into alignment with the stored reference direction.

If Applicant is of the opinion that there is a description in the prior art (in the form of literature, etc., having a date prior to the filing date of this application), of the internals and manner in which an acceleration sensor is used to determine the angular direction of a resultant of the forces of gravitational and vehicle travel acceleration are sensed, that can accomplish the disclosed and claimed features then copies of said literature, etc., must be submitted for appropriate review by the Office See *In re Ghiron et al.*, 169 USPQ 723, 727.

Additionally, in lines 9-11 of p. 10, Applicant discloses the use of a particular model of an Analog Devices accelerometer with which it is indicated that "the direction of the resultant force resulting from gravity and any travel acceleration" is sensed, however, Applicant does not teach or disclose in a sufficiently clear and concise manner just how (in what orientation) the above noted device is attached to the mast of the fork lift nor in which direction(s) (if not all) the "direction of a resultant of the forces gravitational acceleration and travel acceleration" are actually detected or capable of being detected. It would seem that with the use of only a single two-axis accelerometer, that Applicant would be limited to sensing less than all of the components of the forces associated with the gravitational acceleration *and* that of the vehicle's travel acceleration. For instance, depending on the orientation of the accelerometer on the mast, it may only be possible to distinguish between a forward or backward acceleration of the vehicle (in addition to that representative of gravity), while not being able to take into account possible or potential vehicle travel accelerations in a transverse direction of motion, such as when turning a corner while carrying cargo with a lift truck.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1:

line 1 there is no proper antecedent basis for "the tilt angle";

in line 3 there is no proper antecedent basis for "the lift truck frame";

in lines 3-4 there is no proper antecedent basis for "the angular direction" ;

in lines 5-6 there is no proper antecedent basis for "the forces of gravitational acceleration and vehicle travel acceleration".

In the above instances it is suggested that either "the" be replaced with a positive recitation such as "a", or simply recited as "tilt angle", "lift truck frame", "angular direction", etc.

The recitation of "an acceleration sensor mounted to the lift truck for sensing the angular direction of a resultant of the forces of gravitational acceleration and vehicle travel acceleration" is indefinite because it does not distinguish between simply indicating whether the detected resultant acceleration may only be in a forward/backward orientation (e.g., as in tilting forward or backwards), or if the claimed resultant acceleration is being claimed as sensing both forward /backward and lateral/transverse accelerations (in which case there would be no acceleration component sensed due to gravity) because of the specific orientation of Applicant's two-axis accelerometer to the tillable mast of a fork lift type load bearing vehicle.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 2, 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (6,073,069) in view of Avitan et al. (4,942,529).

Kim discloses a device for stabilizing the mast tilt angle of a cargo carrying lift truck in response to electric signals from a sensor unit 21 and a control unit 22, such that the tilt angle of the mast of the forklift is stabilized with respect to the ground surface. In col. 2 lines 53 – 65, Kim teaches the use of a sensor unit 21 and a control unit 22 (comprising differential circuitry 22a) as means by which the electric signals from the electric sensor 21 are applied to the differential circuitry as part of a PID control system and used to automatically compensate and therefore stabilize tilting of the mast. In column 3 line 38, through col. 4 line 24, Kim further teaches automatic stabilization of the tilt of the equipment in particular when the surface tilt change is severe or when the driving speed is too fast for continuous stabilization. Kim does not particularly teach stabilizing the tilt angle of the forklift with respect to “a resultant of the forces of gravitational acceleration and vehicle travel acceleration”.

Avitan et al. discloses a lift truck control system in which factors such as load elevation, steering angle and load position are examples of operating parameters which are measured in either discrete values or as continuously varying values needed to establish the overall or composite center of gravity of the truck combined with its payload. Further, In col. 7 line 43 through col. 9, line 16 Avitan et al. particularly teaches setting a control limit on the operation of the lift truck dependent upon how much a resultant instantaneous force vector differs from the reference composite value for the center of gravity already stored in the control system.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to have implemented the resultant CG based control parameters of Avitan et al., within the mast tilt stabilizing system of Kim, in order to provide automatic tilt control within a certain range of operating parameters when considering terrain conditions as well as the speed and direction of travel of the vehicle.

The statement of intended use for sensing, feedback, storing, varying, etc. "capable of", "adapted to", "adapted for", "whereby" or wherein" clauses are essentially method limitations or statements of intended or desired use. Thus these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference(s). See in re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex Parte Masham, 2 USPQ2nd 1647.

See MPEP § 2114 which states:

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A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2d 1647

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ishikawa (6,266,594) teaches a body swing control system for a lift truck in which wheel angle θ and V vehicle speed are used in determining the stability of a lift vehicle.


12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward Pipala whose telephone number is 571-272-1360. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EJP


JACK KEITH
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